

Dr. Defant's report on the influence of weather conditions on migration deserves careful study. It is interesting to note that in tabulating the data to show which days are characterized by the greatest number of arrivals he adopts the same plan used by the Delaware Valley Ornithological Club in 'Cassinia,' except that he does not reject the obviously 'late dates.'—W. S.

**Grinnell on the Mammals and Birds of the Lower Colorado Valley.**<sup>1</sup>—The latest of Dr. Grinnell's studies of California birds and mammals and their distribution has to do with that portion of the Colorado River valley which forms the southeastern boundary of the state. The expedition which furnished most of the data and material for the present report was made possible by the generosity of Miss Annie M. Alexander, founder of the California Museum of Vertebrate Zoölogy. Dr. Grinnell took personal charge of the field work and was assisted by Messrs. Frank Stephens, Joseph Dixon and L. Hollister Jones. The party descended the river by boat from Needles nearly to the Mexican line below Yuma, making twenty-nine stops, and occupying three months' time, from February 15 to May 15, 1910. A collection of 1272 mammals and 1374 birds was secured as well as many other specimens.

To the carefully prepared annotated list are added chapters on the 'Zonal and Faunal Position of the Region'; the 'Associational Areas'; 'The Colorado River as a Highway of Dispersal'; and as a 'Hindrance to Dispersal' and 'The Problem of Barriers with Regard to Birds and Mammals.'

Under these headings Dr. Grinnell continues the discussion of the problems and principles of distribution which has characterized his recent papers. Attention is called to the "two schools of faunistic students," one of which regards temperature as the chief factor in controlling distribution while the other advocates "a composite control, of many factors resulting in ecologic 'associations,'" and the author attempts to bring these views into accord on the theory, which we heartily endorse, that they are due simply to "difference in perspective." He recognizes again zones due to climatic differences; faunas, due to differences in humidity; and associations, due to environmental conditions—both inanimate and animate.

Eleven different associations are recognized—the River, Willow-Cottonwood, Tule, Arrowweed, Quail-brush, Mesquite, Saltbush, Creosote, Catclaw (or Wash), Saguaro, and Encelia (Rocky Hills)—with lists of characteristic birds and mammals. The species are separated into several categories according as whether they are exclusively restricted to the given 'association' or are at their maximum or minor abundance there. The

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<sup>1</sup> An account of the Mammals and Birds of the Lower Colorado Valley, with Especial Reference to the Distributional Problems Presented. By Joseph Grinnell. Univ. of Cal. Publ. in Zoology, Vol. 12, No. 4, pp. 51-294, pls. 3-13, 9 text figs. March 20, 1914.

characteristic winter species are included in the lists as well as those that breed. In discussing barriers the author points out that the degree of difference between mammals occurring on the two sides of the Colorado, varies directly as the extent to which the river proves a barrier to their dispersal. He considers that the ranges of all birds and mammals will be accounted for by one or more of the several kinds of barriers which he tabulates, *i. e.* (1) Tangible (mechanical), land to aquatic species or bodies of water to terrestrial; (2) Intangible (non-mechanical); (a) Zonal (temperature), (b) Faunal (humidity), (c) Associational—food supply, breeding places and temporary refuges. He also believes "that only through the agency of barriers is the multiplication of species, in birds and mammals, brought about."

The annotated list includes 150 species or subspecies and is full of original matter relative to the distribution and relationship of races. Some of the most interesting notes are those relating to the tendency to red in place of yellow in the wings and tail of *Colaptes chrysoides* which the author considers is not an evidence of hybridism; also the discussion of *Phalacroptilus*, two forms of which were present, one resident, the other a winter visitant, and the results of his study of *Geothlypis trichas*, which lead to the conclusion that there is no recognizable Pacific coast race *arizela*.

Dr. Grinnell's recent publications set a very high standard, and one which writers of faunal papers would do well to follow. The day when a mere annotated list forms an acceptable contribution to North American ornithology is rapidly passing and an author will soon be required to be versed in the various problems of evolution and capable of using his data in their elucidation.—W. S.

**Bangs and Phillips on Birds from Yunnan.**<sup>1</sup>—A collection of 1376 bird skins made by a Japanese collector in southern Yunnan has recently been acquired by the Museum of Comparative Zoölogy and a list of the 240 species, with comments, is here presented. The following are described as new: *Niltava sundara denotata* (p. 280), Mengtze; *Cryptolopha trivirgatus eiuncidus* (p. 282), Mengtze; *Pericrocotus brevirostris thologus* (p. 282), Hsienchan, Hupeh, China, W. R. Zappey; *P. b. flavillaceus* (p. 283), Koolloo Valley, northern India; *Spizixus canifrons ingrani* (p. 285), Mengtze; *Ianthocincla lustrabila* (p. 285), Loukouchai; *Pomatorhinus maclellandi odicus* (p. 286), Mengtze; *P. ruficollis reconditus* (p. 286), Mengtze; *Actinodura ramsayi yunnanensis* (p. 288), Loukouchai; *Enicurus guttatus bacatus* (p. 292), Loukouchai; *Ianthia practica* (p. 292), Loukouchai; *Buchanga leucogenys cerussata* (p. 302), Ichang, Hupeh, China, W. R. Zappey.—W. S.

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<sup>1</sup> Notes on a Collection of Birds from Yunnan. By Outram Bangs and John C. Phillips. Bull. Mus. Comp. Zoöl., Vol. LVIII, No. 6, April, 1914, pp. 267-302.